SMT15C Series

5 Vin and 12 Vin single output

Total Power: **50W**
Input Voltage: **4.5-5.5 Vdc**
# of Outputs: **Single**

Special Features

- 15 A current rating
- Input voltage range:
  4.5 Vdc - 5.5 Vdc or
  10.2 Vdc - 13.8 Vdc
- Output voltage range:
  0.9 Vdc - 3.3/5.0 Vdc
- Industry leading value
  - Cost optimized design
- Excellent transient response
- Output voltage adjustability
  - Pathway for future upgrades
  - Supports silicon voltage migration
  - Resulting in reduced design-in and qualification time
- Designed in reliability:
  MTBF of >7 million hours
  per Telcordia SR-332
- Available RoHS compliant
- 2 year warranty

Safety

UL/cUL CAN/CSA 22.2 No. 60950
UL 60950 File No. E139421

TÜV Product Service
(EN60950:2000)
Certificate No. B 04 08 19870 228
CB report and certificate to
US/6415C/UL

The SMT15C series is a new high density open-frame, non-isolated converter for space sensitive applications. Each model has a wide input range (4.5 Vdc to 5.5 Vdc or 10.2 Vdc to 13.8Vdc) and offers a wide 0.9 Vdc to 5.0 Vdc output voltage range with a 15 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to the 5 V maximum. Typical efficiencies for the models are 89% for the 5 V input version and 91% for the 12 V input version. The series offers remote ON/OFF and overcurrent protection as standard. With full international safety approvals including EN60950 and UL/cUL60950, the SMT15C reduces compliance costs and time to market.

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Specifications

All specifications are typical at nominal input, full load at 25°C unless otherwise stated.

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 7)	5 Vin 12 Vin	0.9-3.3 Vdc 0.9-5.0 Vdc
Output setpoint accuracy	1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2%
Load regulation	Full load to min. load	±0.5%
Min/max load		0 A/15 A
Overshoot (at turn-on)	5 Vin 12 Vin	3.0% max. 1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise 5 Hz to 20 MHz	(See Note 6)	See Table on page 2
Transient response (See Note 1)		100 mV max. deviation 200 µs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range	5 Vin 12 Vin	4.5-5.5 Vdc 10.2-13.8 Vdc
Input current	Minimum load Remote ON/OFF	65 mA 20 mA
Input current (max.) (See Note 9)	5 Vin 12 Vin	11.5 A max. @ Io max. 8.1 A @ Io max.
Input reflected ripple (See Note 2)	5 Vin 12 Vin	200 mA (pk-pk) 200 mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		 Positive logic >2.4 Vdc <0.8 Vdc
Start-up time (See Note 3)	Power-up Remote ON/OFF	<20 ms <20 ms

INPUT SPECIFICATIONS (CONTD.)

Turn ON threshold	5 Vin 12 Vin	4.5 Vdc typ. 9.3 Vdc typ.
Turn OFF threshold	5 Vin 12 Vin	4.3 Vdc typ. 7.8 Vdc typ.

GENERAL SPECIFICATIONS

Efficiency		See Table on page 2
Switching frequency	Fixed	200 kHz
Approvals and standards	(See Note 4)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		14.2 g (0.5 oz)
Coplanarity		150 µm
MTBF	Telcordia SR-332	7,817,294 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 10)	Operating ambient, temperature Non-operating	0 °C to +80 °C -40 °C to +125 °C

PROTECTION

Short-circuit	Hiccup, non-latching

RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 11)	270 µF/20 mW ESR max.
Output capacitance	(See Note 11)	680 µF/10 mW ESR max.

Specifications

All specifications are typical at nominal input Vin = 12 V, full load at 25°C unless otherwise stated.

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER (12,13)
						LINE	LOAD	
50 W	4.5-5.5 Vdc	0.9-3.3 Vdc	0 A	15 A	89%	±0.2%	±0.5%	SMT15C-05SADJJ
75 W	10.2-13.8 Vdc	0.9-5.0 Vdc	0 A	15 A	91%	±0.2%	±0.5%	SMT15C-12SADJJ

Part Number System with Options

SMT15C-12SADJJ

- Product Family: SMT = Surface Mount
- Rated Output Current: 15 = 15 A
- Performance: C = Cost Optimized
- Packaging Options (12): J = Pb-free (RoHS 6/6 compliant)
- Number of Outputs: SADJ = Single Adjustable Output
- Input Voltage: 05 = 4.5 Vdc to 5.5 Vdc; 12 = 10.2 Vdc to 13.8 Vdc

Output Voltage Adjustment of the SMT15C Series

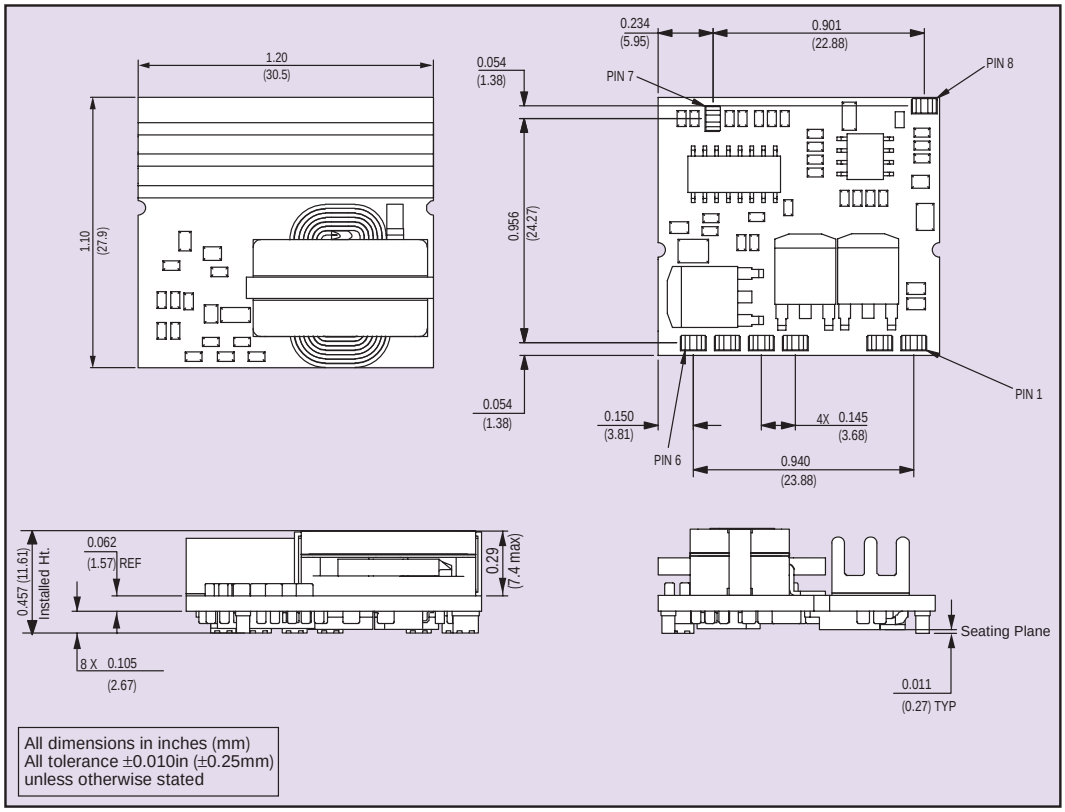
The ultra-wide output voltage trim range offers major advantages to users who select the SMT15C series. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.9 Vdc to 5.0 Vdc. When the SMT15C series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V.

Notes

1 di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.50 lo max. to 0.75 lo max, and vice versa.
2 Measured with external filter. See Application Note 169 for details.
3 Power up is the time from application of dc input to POWER GOOD high. Remote ON/OFF asserted high to POWER GOOD high.
4 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
5 Reserved.
6 Measured as per recommended set-up. Cin = 270 µF (20mW ESR max.), Cout = 680 µF (10 mW ESR max.).
7 Uses external resistor from TRIM to ground. See Application Note 169 for details. Minimum value 485 µF for 5 V model, 280 µF for 12 V model.
8 Signal line assumed <3 m in length.
9 External input fusing recommended.
10 See Application Note 169 for operation above 50 °C.
11 See Application Note 169 for more details.
12 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
13 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at http://www.artesyn.com/powergroup/products.htm to find a suitable alternative.

Ripple and Noise Specification

Model	Output Voltage	Pk - Pk	RMS
5 V input models	0.9 Vdc to 2.5 Vdc	30 mV	15 mV
	3.3 Vdc	40 mV	15 mV
12 V input models	0.9 Vdc to 2.5 Vdc	50 mV	25 mV
	3.3 Vdc to 5 Vdc	50 mV	25 mV



PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Vout
2	Vout
3	Power Good
4	GND
5	GND
6	Vin
7	Trim
8	Remote ON/OFF

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